

**PP-028** Hepatoprotective activity of *Ximenia americana* against carbon tetrachloride induced hepatic damage in rats

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**Objective:** To evaluate hepatoprotective activity of methanol extract of leaves of *Ximenia americana* (MEXA) using carbon tetrachloride (CCl<sub>4</sub>)-intoxicated rat liver as the experimental model.

**Methods:** The effects of oral pretreatment with MEXA (200,400 and 600 mg/kg body weight 7days) were studied on hepatic damage induced by carbon tetrachloride (CCl<sub>4</sub>) (1: 1 in groundnut oil, 0.1 ml/kg, sc. on 20th day) and in rats. Biochemical parameters like SGOT, SGPT, serum bilirubin, plasma prothrombin time and tissue lipid peroxides were estimated to assess the liver function.

**Results:** The increased serum transaminases, bilirubin, plasma prothrombin time and lipid peroxides in liver were significantly inhibited by MEXA at tested doses in dose dependant manner. The observed decreased enzyme activities of SGOT, SGPT, serum bilirubin, plasma prothrombin time and tissue lipid peroxides were nearly normalized by MEXA treatment. These biochemical observations were supplemented by histopathological examination of liver sections.

**Conclusion:** These findings suggest that the use of *Ximenia americana* as a plant hepatoprotector in the diet of patients with hepatopathies.

**PP-029** Immunomodulatory effects of *Phyllanthus acidus* and *Parkia javanica* whole plant extracts on murine splenic macrophages

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**Objective:** Macrophages are the principle cells in charge of our innate and acquired immune system, which upon activation increases expression of lysosomal enzymes and respiratory burst. *Phyllanthus acidus* and *Parkia javanica* are tropical plants that are consumed as herbs by the Indian tribal for remedy of gastrointestinal tract disorders; we have tried to establish whether they have any immunomodulatory effects on the macrophages for an enhanced immune action.

**Methods:** Murine splenic macrophages, suspended in DPBS, glucose and BSA medium were used for assays. 200 µl of cell suspension (10<sup>6</sup> cells/ml) were incubated for a dose and time dependent study with two plant extracts respectively. Western Blotting was also performed for enzyme qualitative study.

**Results:** The two different plant extracts when co-incubated separately with splenic macrophages, giving a significant rise in lysozyme and myeloperoxidase enzyme release (P<0.05) at the concentration of 10,000 ng/ml, which was further used for a time dependent study. It was found out that *P. acidus* extract gave a significant release with co-incubation after a 2 hour treatment. However *P. javanica* showed similar release effect at 90 min interval. Western blotting confirmed that the level of enzyme increased nearly 2 folds in both the cases.

**Conclusion:** These results indicated the fact that these plants extracts have a toxic effect on infectious microbes of the gastrointestinal tract. Their effect is induced by an over expression and subsequent release of lysozymes and myeloperoxidase through activation of reactive oxygen species (ROS) independent and ROS dependent action respectively.

**PP-030** Expression and alteration of hepatic nuclear-transcription factor-κB in hepatocarcinogenesis

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**Background:** The dynamic expression and alterations of NF-κB were evaluated, and its expression states at different tissues were analyzed for exploring its clinical implications for HCC.

**Methods:** Hepatoma models were induced by oral 2-acetamidofluorene on male SD rats. Morphological changes were observed by pathological examinations. NF-κB expression during different stages of canceration was investigated by immunohistochemistry, and NF-κB level in liver tissues were quantitatively analyzed by ELISA, respectively. Total RNAs were extracted from liver tissues. The gene fragments of hepatic NF-κB were amplified by nested-PCR assay.

**Results:** The hepatocytes showed vacuole-like denaturation during the early stages, then hyperplastic nodal appearance during middle stage, and finally progression to tubercles of cancerous nest with highly differentiated HCC during development of HCC by histological examinations. The NF-κB-positive material was buffy fine particle localized in the nucleus and the incidence of NF-κB was 81.8% in denaturation, 83.3% in precancerous lesion, and 100% in cancerous tissues, respectively. All of the incidences during different stages were significantly higher than that of the normal control (P<0.01). Meanwhile, An increasing tendency of liver NF-κB expression was found in the course of HCC development when compared with that in normal controls (p<0.01). The expression of hepatic NF-κB-mRNA were obviously increased in liver tissues of degeneration, precanceration, and canceration rats, but not in normal controls.

**Conclusion:** The activation of NF-κB signal transduction pathway and it abnormal expression could be associated with occurrence of HCC.

**PP-031** Tissue repair effects of *in vivo* transfer of Pim-3-expressed plasmid on lipopolysaccharide/D-galactosamine-induced fulminant hepatic failure in rats

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**Objective:** To investigate the effects of Pim-3 gene on fulminant hepatic failure (FHF).

**Methods:** Thirty-two rats were randomly divided into four groups (eight for each group). Group A was normal. Group B, C and D were respectively pretreated with Ringer's solution, vector and recombinant plasmid by hydrodynamics-based procedure and received intraperitoneal injections of LPS and D-GalN after 1 day. 8h after injections of LPS/D-GalN, liver and blood samples were collected; The contents of serum transaminase was tested; The morphological changes were observed by light microscopy; GFP levels were appraised under fluorescent microscope; Cell apoptosis of liver tissues was detected by TUNEL assay.

**Results:** 24h after LPS/D-GalN challenge, 87.5% lethality was induced in group B and C, but only 12.5% in group D; Hepatic enzymes showed dramatic increases in group B and C, whereas only a slight increases was observed in Pim-3-treated rats; Over-expression of GFP was observed in group C and D, but group A and B had no trace of GFP; Liver histopathologic analysis from group B and C showed widespread destruction of liver architecture, erythrocyte agglutination and neutrophil infiltration. Whereas liver architecture was completely preserved, and few neutrophil or lymphoid infiltrates were observed in group D; Numerous apoptotic cells were evidenced by TUNEL assay after the drugs' challenge. But, by contrast, liver apoptosis in Pim-3-treated rats was markedly inhibited.